

AMSAT News Service Weekly Bulletins

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AMSAT NEWS SERVICE

ANS-346

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on <http://www.amsat.org> publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to: [ans-editor \[at\] amsat.org](mailto:ans-editor@amsat.org)

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<https://mailman.amsat.org/postorius/lists/ans.amsat.org/>

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ANS-346 AMSAT News Service Weekly Bulletins

To: All RADIO AMATEURS

From: Radio Amateur Satellite Corporation

712 H Street NE, Suite 1653

Washington, DC 20002

DATE 2021 Dec 12

Jonathan Brandenburg, KF5IDY, Appointed Assistant VP, Engineering

At a meeting with the Board of Directors on Tuesday, December 7 VP Engineering appointed Jonathan Brandenburg as Assistant Vice President, Engineering to oversee a new program tentatively named "Fox Plus".

"Jonathan brought a new idea to me, for continuous LEO presence through a refresh of AMSAT's Fox-1 FM Satellite. In using the basic Fox-1 bus design, the ability to fly not only student STEM experiments but our own radio experiments as well, provides an opportunity to refresh the presence of LEO "Easy-Sat" type communications and bring in new volunteer engineers to develop the new transceiver and power supply needed to resurrect Fox-1 type CubeSats" said Jerry Buxton, VP Engineering.

"In addition, Jonathan has further intentions targeting frequent deliveries of Fox Plus CubeSats into orbit, wide use of open-source in the program, and utilizing the ASCENT platform for development of future iterations of Fox Plus."

"The Fox Plus working title indicates both the continued Fox-1 type presence in LEO as well as the added growth in technology and human resources that will come with the program. I think it is a well thought, and very suitable name for the new program."

The 2022 Engineering budget which was also part of the meeting and passed by the Board includes funds for the startup of the new program.

"Jonathan has a good vision and plan for this new program that will generate new engineering opportunities, especially focused on new volunteers working in groups on parts of the whole. Fox Plus will also provide the open source startup that we were seeking, and work on Fox Plus and through ASCENT should provide new technology for use beyond LEO as well, as we continue our course in returning to HEO" Buxton said.

Jonathan has already begun work, and will be reaching out with updates and information on how to volunteer as the program gets into gear in early 2022.

[ANS thanks Jerry Buxton, AMSAT VP Engineering, for the above information]

AMSAT-HB Has Been Established

A new amateur radio satellite organisation AMSAT-HB was formed in Switzerland on November 26, 2021.

With QO-100, interest in amateur radio services via satellites has also risen sharply in Switzerland. But not only the geostationary satellite fascinates the radio amateurs: The ARISS project (space station ISS), low-flying satellites, tracking of scientific deep space missions, etc., are attracting more and more attention. More and more experiments are being carried out with SDR technology in these areas.

But the colleges and universities are also increasingly concerned with the topic and are looking for help from various radio amateurs in Switzerland. These and other radio amateurs were of the opinion that it was time to join forces in Switzerland. For this reason, the AMSAT-HB was founded on Friday, November 26th, 2021 in Nottwil, Lucerne. The association has set itself the goal of promoting the amateur radio service via satellites in Switzerland, but also internationally.

The President of AMSAT-DL, Peter Gültow - DB20S, was involved in this project in advance. He suggested the establishment of an AMSAT-HB early on and also used his knowledge to help design it. When it was founded, Peter Gültow took on the role of godparent and led the founding meeting live from Hanover via Web.

The following radio amateurs were involved as founding members (alphabetically according to callsign - the board positions in brackets)

- DB20S, Peter Gültow (founding god and now honorary member of AMSAT-HB)
- HB9ARK, Martin Klaper (Technical Responsible)
- HB9CQK, Frédéric Furrer
- HB9DUN / DH2VA, Achim Vollhardt
- HB9MFL, Armin Rösch
- HB9SKA, Thomas Frey (Actuary and Treasurer ad interim)
- HB9RYZ, Wolfgang Sidler (Vice President)
- HB9WDF, Michael Lipp (President)

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Often, mere curiosity is sufficient to do something. This is also the case with people trying to analyze the communication setup and protocol which SpaceX is using with their Ku-band based Starlink satellites.

For the capturing itself, Christian is using a second-hand dish for capture and a DIY SDR using KC705 FPGA-based hardware – which may have begun its life as crypto mining hardware – along with the usual assortment of filters and other common components with this kind of capture.

Christian has also announced that at some point he'll set up a website and publish the findings and code that should make Starlink signal analysis easy for anyone with a readily available SDR receiver.

[ANS thanks Stephen Walters, G7VFX, and Southgate ARC for the above information]

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<https://tinyurl.com/ANS-GOLF>

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"This group, based across 15 countries around the world, has been supporting amateur radio from the space station and performing school links around the world to astronauts for over 20 years," the announcement pointed out. "As well as enthusing youngsters in the magic of space and radio, they have also generated publicity for amateur radio in the mainstream media channels of radio, TV, and newspapers."

Recovered from 1 archived source message; see reconstruction provenance

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Want to fly the colors on your own grid expedition?
 Get your AMSAT car flag and other neat stuff
 from our Zazzle store!
 25% of the purchase price of each product goes
 towards Keeping Amateur Radio in Space
https://www.zazzle.com/amsat_gear

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Changes to AMSAT-NA TLE Distribution for December 9, 2021

The following satellite has decayed from orbit and has removed from this week's AMSAT TLE Distribution:

EcAMSat - NORAD Cat ID 43019 (Decay date per Space-Track was 12-08-2021)

The following satellite is now End of Mission and has been removed from this week's AMSAT TLE Distribution:

H0-107 (HuskySat-1) - NORAD Cat ID 45119 (per www.amsat.org)

[ANS thanks Ray Hoad, WA5QGD, AMSAT Orbital Elements Manager, for the above information]

ARISS NEWS

Amateurs and others around the world may listen in on contacts between amateurs operating in schools and allowing students to interact with astronauts and cosmonauts aboard the International Space Station. The downlink frequency on which to listen is 145.800 MHz worldwide unless noted otherwise below.

RECENT CONTACTS:

Notre Dame Jogakuin Junior and Senior High School, Kyoto, Japan, direct via 8N3ND. Contact with crewmember is Raja Chari KI5LIU was scheduled for Thursday 2021-12-09 08:33:35 UTC 83 deg.

DLR_School_Lab Braunschweig, Braunschweig, Germany, multi-point telebridge via DN2DLR. Contact with crewmember Matthias Maurer, KI5KFH, was scheduled for Friday 2021-12-10 13:50:53 UTC 61 deg.

Savannah River Academy, Grovetown, GA, direct via K4RGK. Contact with crewmember Thomas Marshburn, KE5H0C, was scheduled for Friday 2021-12-10 15:09:58 UTC 54 deg

SCHEDULED CONTACTS:

Wolfgang-Kubelka-Realschule (WKR), Schondorf am Ammersee, Germany, telebridge via IK1SLD. The ISS callsign is presently scheduled to be OR4ISS. Contact with crewmember Matthias Maurer, KI5KF, is go for Monday 2021-12-13 09:51:56 UTC 46 deg. Starting about 5 minutes before AOS, watch for Livestream at: www.ariotti.com

Technisches Bildungszentrum Mitte (TBZ Mitte), Bremen, Germany, direct via DN3HB AND Carl Prueter Oberschule, Sulingen, Germany, direct via DN60E. The ISS callsign is presently scheduled to be DP0ISS. Contact WITH crewmember is Matthias Maurer, KI5KFH, is go for Thursday 2021-12-16 10:45:25 UTC 74 deg

The next mode change to packet is expected to occur in early December.

The latest information on the operation mode can be found at <https://www.ariss.org/current-status-of-iss-stations.html>

The latest list of frequencies in use can be found at
<https://www.ariss.org/contact-the-iss.html>

[ANS thanks Charlie Sufana, AJ9N, one of the ARISS operation team mentors for the above information]

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AMSAT, along with our ARISS partners, is developing an Amateur Radio package, including two-way communication capability, to be carried on-board Gateway in lunar orbit.

Support AMSAT's projects today at <https://www.amsat.org/donate/>

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Upcoming Satellite Operations

K4DCA: Still in planning stages, but has mentioned EM97, EM96, FM07, FM08

Radio Operadores del Este Club (KP3RE) and its FB Ham Satelites Puerto Rico page will be giving away a certificate until December 31, 2021 to all the stations that have contacted Puerto Rico's 4 grids FK67, FK68, FK77 and FK78 on Sat Mode. Need LOTW evidence (Photos) request via [kp4rv\(a\)yahoo.com](mailto:kp4rv(a)yahoo.com)

[ANS thanks Paul Overn, KE0PBR, AMSAT rover page manager, for the above information]

Hamfests, Conventions, Maker Faires, and Other Events

AMSAT Ambassadors provide presentations, demonstrate communicating through amateur satellites, and host information tables at club meetings, hamfests, conventions, maker faires, and other events.

None currently scheduled.

[ANS thanks Paul Overn, KE0PBR, AMSAT Events page manager, for the above information]

Satellite Shorts From All Over

+ The U.S. Senate has confirmed FCC Chairwoman Jessica Rosenworcel for a new term on the Commission with a vote of 68 - 31. President Joe Biden appointed Rosenworcel as Chair of the FCC in late October. For now, the FCC will continue with two Democrats and two Republicans led by Chairwoman Rosenworcel. (ANS thanks ARRL for the above information)

+ Scientists have developed a hi-tech sleeping bag that could prevent the vision problems that some astronauts experience while living in space. Its development was led by Dr Benjamin Levine, professor of internal medicine at University of Texas (UT) Southwestern Medical Center in Dallas, who is working on having the device deployed on the International Space Station (ISS). In zero-gravity, fluids float into the head and squash the eyeball over time. It's regarded as one of the riskiest medical problems affecting astronauts. The sleeping bag, developed with outdoor equipment manufacturer REI, fits around the person's waist, enclosing their lower body within a solid frame. A suction device, that works on the same principle as a vacuum cleaner, creates a pressure difference that draws fluid down towards the feet. This prevents it from building up in the brain and applying damaging

pressure to the eyeball. (ANS thanks BBC.com for the above information)

+ The Hubble Space Telescope (HST) is once again fully operational after experiencing technical issues. With this latest restoration of operations, Hubble is well on its way to completing 32 years of service. [Not quite matching A0-7, which is approaching the age of 48! - Editor] (ANS thanks Universe Today for the above information)

+ NASA announced Dec. 3 its intent to purchase three more commercial crew missions from SpaceX as a hedge against further delays in the certification of Boeing's CST-100 Starliner. These missions will be in addition to the six missions that SpaceX won as part of its Commercial Crew Transportation contract in 2014. SpaceX launched the third of those six original missions, Crew-3, to the International Space Station on Nov. 10. It is scheduled to launch the Crew-4 mission in the spring of 2022, likely to be followed by Crew-5 in the fall of 2022. (ANS thanks Space News for the above information)

+ Operators are reminded that the AMSAT Live OSCAR Satellite Status Page is available at <https://www.amsat.org/status/>. Satellite operators are invited to consult the page for up to date information about which satellites are available and functioning. Operators are also requested to contribute reports to the Status Page concerning their operations and observations. (ANS thanks AMSAT for the above information)

+ A key member of the WSJT-X development group – where FT8 and other cutting-edge digital amateur radio technology has originated – has died. Bill Somerville, G4WJS, was reported to have passed away earlier this week. He was in his mid-60s, and his death was unexpected. (ANS thanks ARRL for the above information)

+ Not quite a Christmas miracle, nor the star of Bethlehem: Comet Leonard is a rather typical comet going about its typical path around the Sun. However, it might become visible to the naked eye around its close approach. On 12 December at 13:52 UTC, it will make its closest approach to Earth during this rotation, still an enormous 35 million kilometres away. Look low in the southwestern sky about 45 minutes after sunset. (ANS thanks ESA for the above information)

+ Please continue to use A0-91 and A0-92 only when the satellites are illuminated by the sun. A0-92 telemetry and repeater are intermittent. A0-91 telemetry is turned off but the FM repeater works when the satellite is in the sun. Reminder: Satellite in sun is approximately equal to user in daytime. For exact information on eclipse vs. illumination, check software such as SatPC32. (ANS thanks Burns Fisher, WB1FJ, AMSAT operations, for the above information)

Join AMSAT today at <https://launch.amsat.org/>

In addition to regular membership, AMSAT offers membership to:

- * Societies (a recognized group, clubs or organization).
- * Primary and secondary school students are eligible for membership at one-half the standard yearly rate.
- * Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status.
- * Memberships are available for annual and lifetime terms.

Contact info [at] amsat.org for additional membership information.

73 and remember to help Keep Amateur Radio in Space!

This week's ANS Editor, Mark Johns, K0JM
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